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hypothesis of proven value.—Charles W. Eliot, president emeritus of Harvard University.

Should regard bill such as you suggest certain to make Kentucky the laughing stock of the world. To prohibit the scientific teaching of the facts of evolution would involve adopting intellectual attitude of the twelfth century. It is a proposition which could not be seriously entertained by any really intelligent person.—James R. Angell, president of Yale University.

I take it for granted that the introducer of the bill is in close communion with the rulers of Soviet Russia, since he is faithfully reproducing one of their fundamental policies. Truly we are getting on.—Nicholas Murray Butler, president of Columbia University.

In the name of two hundred and fifty colleges and universities located in forty-two states we pray Kentucky will not commit intellectual suicide by prohibiting the teaching of evolution or the use of books favoring evolution.'—Robert L. Kelly, executive secretary, Association of American Colleges, New York.

Any attempt to impose legislative restrictions on the teachers of science is contrary to all the principles on which the American Republic has been founded.—Charles S. MacFarland, general secretary Federal Council of the Churches of Christ in America, New York.

CARDINAL DOUGHERTY ON VIVISECTION

CARDINAL DOUGHERTY, of Philadelphia, under date of December 30, 1921, addressed the following letter to the Society for the Protection of Scientific Research:

Having been asked to give an expression of opinion on the subject of vivisection, I deem it needless to say that, with you and all others opposed to cruelty of whatever kind, I deplore any abuse of vivisection that may cause unnecessary pain to lower animals.

But as actually conducted for the advancement of medical research, vivisection seems to me not only unobjectionable, but even praiseworthy. Scientifically carried out, it is, as you know better than I, almost entirely confined to the inoculation of mice, rats, guinea pigs and rabbits, and is much less frequently practiced on cats, dogs, horses and other higher species of brute animals. Since the invention of anesthetics, and with the use of antiseptic methods, it has become practically painless. Animals used for experimental purposes are well fed and sheltered, and in many respects are better off than those in a

state of nature or in subjection to work. They escape the rapacity of fiercer and larger animals, the ill-usage of sport, the drudgery of toil, exposure to the heat and cold of the seasons, and the cruelties of keepers, drivers and exploiters.

According to the law of nature, the lower species of creatures exist for the higher. The clod of earth supports the plant. The vegetable kingdom supplies the wants of the animal. The brute animal and all other inferior things are for the good of man, who was made directly for the glory of God. Man, then, may use all inferior things for his own benefit.

We exterminate vermin and insects, roaches, mice, rats and serpents, for the sake of health, cleanliness and comfort. The children in our schools are taught to combat the plague of flies as carriers of noxious microbes. We kill animals, fowls and fish for our food. Fishermen bait fish with live worms.

If, then, to preserve or restore health, to prolong life, and even to seek pleasure, it is permissible to inflict pain and death upon inferior forms of animal life, why may not the scientific man, for the common good, experiment on lower animals, especially when he takes every precaution against unwarranted infliction of pain by the use of anesthetics and by antiseptic methods?

Animals, themselves, owe to vivisection a great debt. Epizootic diseases, like anthrax, swine-fever, chicken cholera, silk-worm disease, cattle tuberculosis, which, in the past, caused untold suffering to animals, and every year killed them by millions, have been brought under control by the experiments of vivisection.

But man is the chief beneficiary. For it has been mainly owing to these experiments that great discoveries have taken place regarding the nervous system, bone growth, the blood, digestion, infections, serums, antitoxins and vaccinations; and without vivisection little or no progress would have been made in physiology, pathology, bacteriology and therapeutics.

To forbid vivisection would be to hamper science, do a mischief to the human race and foster misplaced sympathy.

SCIENTIFIC NOTES AND NEWS

A SUMMER meeting of the American Association for the Advancement of Science will, by recent vote of the executive committee of the council, be held at Salt Lake City from June 22 to 24, in conjunction with the annual

meeting of the Pacific Division of the association. Arrangements for the meeting are in charge of Mr. W. W. Sargeant, secretary of the Pacific Division. All members of the association and of the associated societies are invited to be present, and all associated societies are invited to hold sessions. Sections of the association are also invited to hold sessions, but no attempt will be made to have all sections represented on the program of the meeting. Information regarding this summer meeting will be published in *SCIENCE* from time to time as the preparations mature.

THE Norman Bridge Laboratory of Physics of the California Institute of Technology was dedicated on January 28. In the afternoon, Dr. Robert A. Millikan, director of the laboratory, was introduced by Dr. A. A. Noyes, and gave an address on "Recent research work on the extension of the ultra violet spectrum and the insight it affords into the nature of matter." In the evening, the laboratory was presented by the donor and accepted by Dr. Millikan on behalf of the institute. There were brief addresses by Mr. Henry M. Robinson, vice-president of the board of directors; George E. Hale, director of the Mount Wilson Observatory, and Dr. H. A. Lorentz, professor of mathematical physics at the University of Leiden. Then followed a reception in honor of Dr. and Mrs. Millikan and Dr. and Mrs. Bridge.

SIR DAVID PRAIN is about to retire, under the age rule, from the directorship of the Royal Botanic Gardens, Kew, which he has held since 1905. He will be succeeded by Dr. A. W. Hill, who has been assistant director since 1907. Dr. Hill, before his appointment to Kew, was lecturer in botany in the University of Cambridge, of which he is a graduate.

THE gold medal of the Royal Astronomical Society has been awarded to Dr. J. H. Jeans for his contributions to theories of cosmogony.

At a recent meeting of the Paris Academy of Medicine the election of new officers for 1922 resulted as follows: Professor Béhal, the vice-president for 1921, succeeded, in accordance with the provisions of the constitution,

to the presidency. Dr. Chauffard, professor of clinical medicine in the University of Paris, was elected vice-president (president for 1923). Dr. Souques was reelected annual secretary.

DR. HENRY CHANDLER COWLES, professor of plant ecology at the University of Chicago, has been elected president of the Chicago Academy of Sciences.

THE American Phytopathological Society, meeting at Toronto December 27 to 31, elected as president Dr. E. C. Stakman, of the University of Minnesota; as vice-president, Dr. N. J. Giddings, of the University of West Virginia; and as secretary-treasurer, Dr. G. R. Lyman, of the U. S. Department of Agriculture, Washington, D. C. Dr. H. B. Humphrey, of the U. S. Department of Agriculture, was elected councillor for one year, and Dr. I. E. Melhus, of the Iowa Agricultural College, for two years.

CHARLES W. PRICE, who has retired as editor of the *Electrical Review* after nearly forty years of service, was the guest of honor at a luncheon given by a number of his friends in the electrical industry on January 18, at the Lotos Club in New York.

DR. FREDERICK L. HOFFMAN, of the Prudential Insurance Company, has been elected a member of the Royal Institute of Public Health.

PROFESSOR FILIBERT ROTH, head of the Department of Forestry of the University of Michigan, was appointed chairman of the Permanent Timber Supply Committee at the National Agricultural Conference held in Washington, D. C., from January 24 to 27.

ACCORDING to the *Journal* of the American Medical Association, it is reported that Dr. Hubert Work, president of the American Medical Association and now first assistant postmaster general, may be named postmaster general to succeed Will H. Hays, who is to resign to become the head of the motion picture industry of the country.

DR. E. W. DEAN, long connected with the Bureau of Mines as petroleum technologist, has resigned to accept the position of assistant

to Roger Chew, inspection department, Standard Oil Company of New Jersey. He will be succeeded in his position at the Pittsburgh Station by N. A. C. Smith of the Washington, D. C., laboratory. F. W. Lane, organic chemist at Pittsburgh, will succeed Mr. Smith.

DR. H. W. DYE has resigned as assistant professor of plant pathology, Cornell University, to become chief pathologist of the research department, Doseh Chemical Company, Louisville, Ky., manufacturers of insecticide materials and appliances. Dr. G. E. Sanders also joins the research department of this company, having resigned as chief of insecticide investigations of the Canadian Department of Agriculture.

DR. H. H. MORRIS, formerly in the chemical department of E. I. du Pont de Nemours and Company, is now director of the research department of the Bond Manufacturing Corporation, Wilmington, Del.

LOUIS E. SAUNDERS has been appointed director of the research department of Norton Company, Worcester, Mass.

STEN DE GEER, acting professor and chairman of the Geografiska Institutet, University of Stockholm, is to give two courses at the University of Chicago during the coming Summer Quarter. One course will deal with the geography of the Scandinavian countries, while the other involves a survey from the standpoint of political and economic geography of the "New Europe."

EMILE F. GAUTIER, professor of geography in the University of Algiers, has arrived in Cambridge to take up his work as French exchange professor at Harvard University for the second half of the current year. Professor Gautier will give a half course on the geography of Northern Africa and the Near East, which will be open both to graduate students and undergraduates and a research course primarily for graduates.

DR. CHRISTEN LUNDGAARD, formerly of the faculty of the University of Copenhagen, has arrived in the United States to become associated with the Rockefeller Institute for the

next two years. He will conduct research work in diseases of the heart and on pneumonia.

CHARLES E. SIMON, of the department of medical zoology, School of Hygiene and Public Health, Johns Hopkins University, has been appointed a delegate from this school to the Second International Congress of Comparative Pathology, to be held at Rome on September 20.

THREE members of the staff of the Rockefeller Institute, Dr. Paulo Provença, Dr. Frederick Russell and Dr. Richard M. Pearce, sailed February 2, for Sao Paulo, Brazil, where they will consult Dr. Carlos Chagas of the Brazilian Department of Health upon the care and treatment of tropical diseases.

DR. CHARLES P. BERKEY, professor of geology at Columbia University, has been given leave of absence to accompany an expedition for research work in Mongolia, which is being financed by the American Museum of Natural History and by the magazine, *Asia*.

DR. ROBERT S. PLATT, of the department of geography at the University of Chicago, is now in Porto Rico in connection with a study of the economic geography of Middle America. The other places to be visited include several of the islands of the West Indies and parts of Mexico, Central America, and the Caribbean coast of South America. Dr. Platt is accompanied by Harold S. Kemp, a student in the geography department and for a time secretary to the Geographic Society of Chicago.

A MESSAGE has been received at Ottawa through Canadian customs officials under date of November 18 last, from a manager of a Hudson Bay post, stating that Donald B. MacMillan was spending the winter at Nauwatta, eighty miles north of Cape Dorset.

THE Middleton Goldsmith lecture of the New York Pathological Society was delivered at the New York Academy of Medicine on February 3, by Professor Thomas Hunt Morgan, of Columbia University, the subject being "Some Possible Bearings of Genetics on Pathology."

THE Joseph Leidy memorial lecture in science at the University of Pennsylvania was given by Dr. William Bateson, director of the John Innes Horticultural Institute, Merton Park, London, on January 24. Dr. Bateson's subject was "The segregation of genetic types."

DR. FRANCIS G. BENEDICT, director of the Nutrition Laboratory of the Carnegie Institution of Washington, lectured at Pennsylvania State College under the auspices of the Institute of Animal Nutrition and the Department of Agricultural Chemistry on the subject "Calories for children," on January 26.

DR. CHARLES WARDELL STILES, professor of medical zoology at the Hygienic Laboratory, Washington, D. C., has completed a series of lectures on nomenclature in medical zoology at the School of Hygiene and Public Health of the Johns Hopkins University, under the auspices of the department of medical zoology.

ON February 3 Professor C. J. Keyser made an address before the Philadelphia Section of the Association of Teachers of Mathematics of the Middle States and Maryland on "The mathematical obligations of philosophy and education." On January 14 he spoke before the New York Schoolmasters' Club on "A new conception of the nature of man and its bearings on education."

AT a meeting of the Royal Institution held on January 20, Sir James Dewar delivered a lecture on "Soap films and molecular forces."

PROFESSOR J. A. FLEMING will deliver a lecture on February 21 before the Institution of Electrical Engineers on "Michael Faraday and the foundations of electrical engineering."

DR. C. E. KENNETH MEES, director of research and development, Eastman Kodak Company, gave several lectures in Montreal and Toronto during the last week in February. On February 20 at Montreal he spoke before the Canadian Club on "The road to wealth." The same evening he lectured before the Montreal Section of the Society of Chemical Industry on "Chemistry and the motion picture." At Toronto he gave the following lectures February 21, "Photography through the micro-

scope," before the Camera Club; February 22, "Chemistry and the motion picture," before the Toronto Section of the Society of Chemical Industry; February 23, "The getting of wisdom," before the Empire Club, and "A hundred years hence," before the Canada First League.

ACCORDING to *Nature* the officers of the Ramsay Memorial Fund announce that the dean and chapter of Westminster have consented that a tablet containing a medallion portrait of Sir William Ramsay should be placed in Westminster Abbey in the place immediately below that occupied by the Hooker tablet. The tablet is being executed by Mr. Charles Hartwell, A.R.A. It is anticipated that the unveiling will take place in October next. At the request of the Ramsay Memorial Committee a commemorative medal of the late Sir William Ramsay has been executed by the French sculptor, M. Louis Bottée. The medals will be struck in London when it is known approximately how many copies will be required.

DR. CHARLES BASKERVILLE, director of the chemical laboratories of the College of the City of New York, died of pneumonia at his home on January 28, at the age of fifty-two.

MR. WILLIAM T. CARRIGAN, one of the senior assistants in the Nautical Almanac Office, U. S. Naval Observatory, died at Washington, D. C., on January 20, 1922. Mr. Carrigan entered the Nautical Almanac Office in March, 1901.

SIR ERNEST HENRY SHACKLETON, the British explorer, died from heart disease on January 5 on board the steamship *Quest*. Captain L. Hussey will accompany the body to England. Professor Gruvel and the other members of the party will continue the expedition.

FATHER GUISEPPE LAIS, vice-director of the Vatican Observatory, has died at the age of seventy-six years.

THE death is announced in *Nature* of two distinguished English engineers—Dr. Edward Hopkinson, who like his brother, John Hopkinson, was a leader in electrical engineering,

and Sir William Matthews, past president of the British Institution of Civil Engineers.

THE death is reported of Senator Ciamician, professor of chemistry at Bologna.

CORRECTING a recent note in *SCIENCE*, the schedule of meetings of the American Astronomical Society is as follows: September, 1922, Yerkes Observatory; December, 1922, Cambridge and Boston; September, 1923, Mt. Wilson Observatory; December, 1923, Vassar College.

NINE British and American scientists, members of the expedition to the Andes Mountains to make a study of the physiological changes which enable people to live permanently at high altitudes, returned on February 1. The expedition was under the leadership of Joseph Barcroft of Cambridge University. Its membership included Dr. Alfred C. Redfield, assistant professor of physiology at the Harvard Medical School; Dr. C. A. L. Binger of the Rockefeller Institute, New York; Dr. George Harrop of the Presbyterian Hospital, New York; Dr. A. V. Bock of the Massachusetts General Hospital; Dr. Henry S. Forbes, of Harvard University; Dr. J. G. Meakins, of Edinburgh University, and Dr. J. H. Doggart of King's College, Cambridge. Professor Barcroft is now giving in Boston a course of Lowell lectures on the work of the expedition.

At the convention of the New York City Federation of Women's Clubs, held in New York City on February 3, a resolution was introduced by Mrs. Belle de Rivera endorsing a bill now before the legislature prohibiting the use of dogs for vivisection. There were about two thousand members in attendance and, according to the daily press, the motion was "overwhelmingly defeated."

THE late George R. White, president of the Potter Drug and Chemical Corporation, has bequeathed to the city of Boston a fund of more than \$5,000,000, the income of which is to be used for creating works of public utility and beauty. Two of the three objects specified by Mr. White are a zoological garden and an aquarium. Other bequests in Mr. White's will are \$100,000 each to the Children's Hospi-

tal, the Museum of Fine Arts and the Massachusetts General Hospital. The Massachusetts Hospital also is given a similar sum for the special purpose of treatment of diseases of the skin. Previous to his death Mr. White had given \$1,000,000 for a new building and endowment for the Massachusetts College of Pharmacy.

It is announced from Montreal that instead of converting the \$100,000 prize he has offered for a cancer cure into a fund for cancer research work, as he had been urged, Lord Atholstan has given a second \$100,000 for research.

THE fortieth course of popular medical lectures will be given under the auspices of the Stanford Medical School on alternate Friday evenings, as follows: January 13, The Basis of Modern Medicine: Dr. William Ophüls. January 27, The Attitude of the Public Toward the Blind: Miss Katherine Foley. February 10, The Treatment of Deformities Following Infantile Paralysis: Dr. Arthur L. Fisher. February 24, The Control of Botulism: Dr. E. C. Dickson. March 10, The Truth About Vivisection: Mr. Ernest H. Baynes. March 24, Present Day Methods of X-Ray Diagnosis: Dr. W. Edward Chamberlain.

THE city of Paris has authorized the expenditure of 2,500,000 francs (\$183,750 at present rate of exchange) for the purchase of radium to be used in the public hospitals for the cure of cancer.

UNIVERSITY AND EDUCATIONAL NOTES

APPROPRIATIONS of \$18,210,353 for colleges and universities, \$12,029,513 for medical schools, and \$646,000 for negro education were made during the last fiscal year by the General Education Board, founded by John D. Rockefeller, according to the report for 1920-21. The total appropriations of the board from its foundation in 1902 to June 30, 1921, have amounted to \$89,017,872. Of the gift of \$50,000,000 made by Mr. Rockefeller in 1919 for teachers' salaries, appropriations were